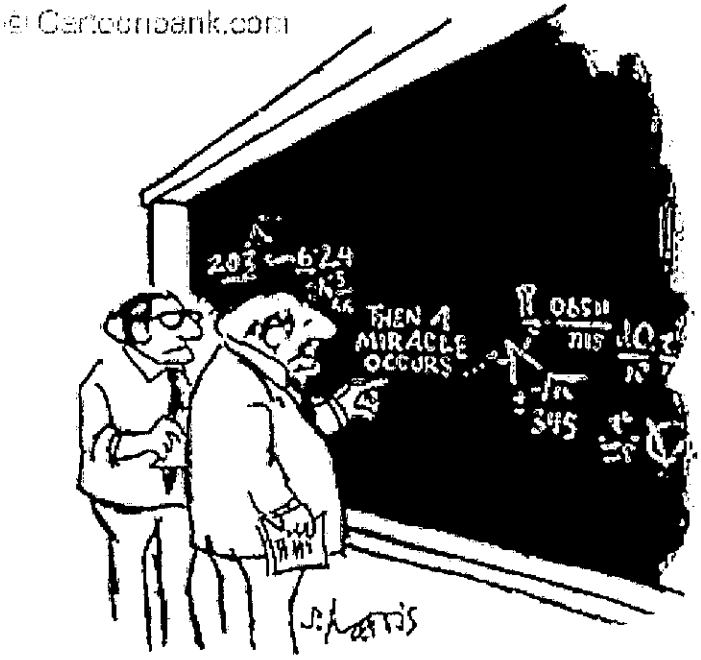
Name: _____

Hour: _____

Unit I:
Surface Area & Volume
Geometry 2nd Semester



"I think you should be more explicit here in step two."

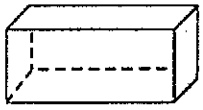
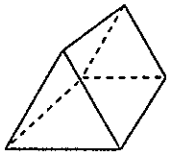
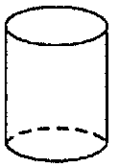
Lesson 10-1: Surface Area Prisms/Cylinders

Vocabulary

Surface Area: _____

_____

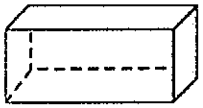
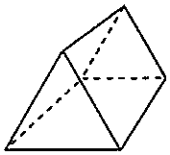
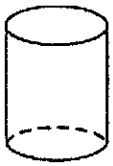
Examples:

Lateral Area: _____

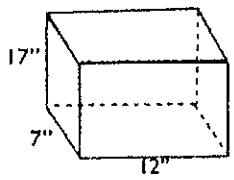
_____

Examples:

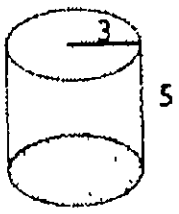




Practice

1. A cardboard box has a base 7" by 12" and a height of 17". What is the total surface area of the box?



2. Using the figure at the right, answer the following:



a) Find it's lateral area.

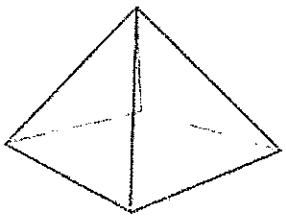
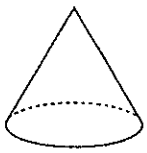
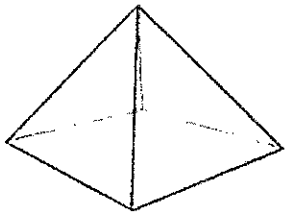
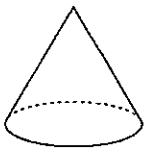
b) Find it's surface area.

3. 16 square **feet** of wrapping paper is needed to wrap a box (without overlap). The height of the box is 10 **inches** and the width of the box is 5 **inches**. What is the depth of the box?

4. How much paper is needed (without overlap) to create a soup can label for the following figure?

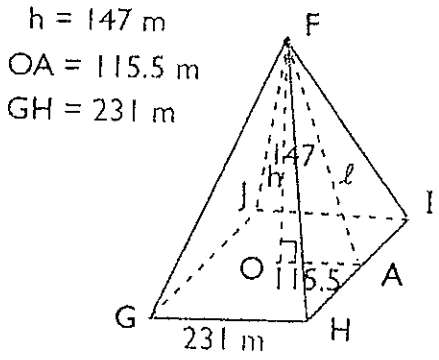
Lesson 10-2: Surface Area of Pyramids & Cones

Formulas

Type	Figure	Formula	Variable Meanings
Lateral Area	Pyramid 		
	Cone 		
Surface Area	Pyramid 		
	Cone 		

Practice

1. Pyramid Khufu has dimensions given.

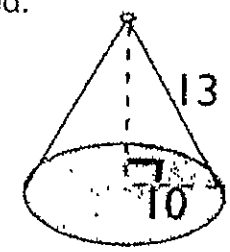


   a. Find the slant height.

   b. Find the lateral area.

   c. Find the surface area.

2. Find the lateral area & surface area of the cone pictured.



   Lateral Area:

   Surface Area:

3. A cone has radius 4.2 and a surface area of 187.4. What is the slant height?

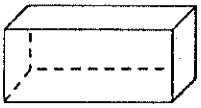
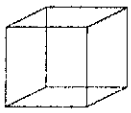
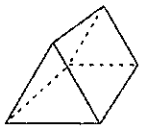
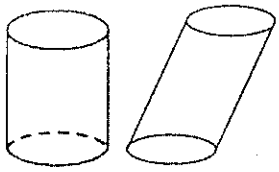
Lesson 10-3 & 10-5: Volume of Prisms & Cylinders

Vocabulary

Cavalleri's Principle: _____

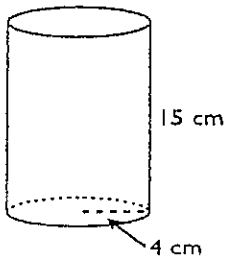
_____

Formulas

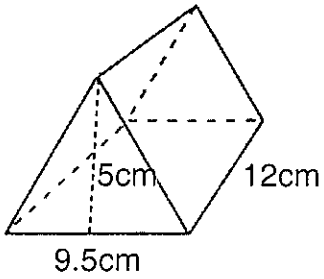
Type	Figure	Formula	Variable Meanings
Volume	**Box** 		
	Cube 		
	Prism 		
	Cylinder 		

Practice

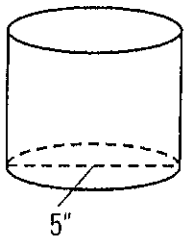
1. Find the volume of the cylinder at the right.



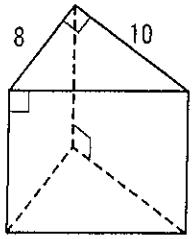
2. Find the volume of the figure below.



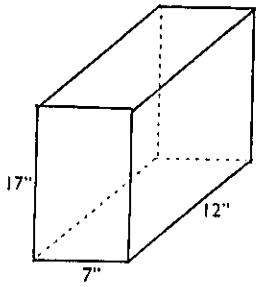
3. If the volume of the cylinder below is 78.5. Find the height of the cylinder.



4. The volume of the triangular prism below is 400. Find the height of the prism.



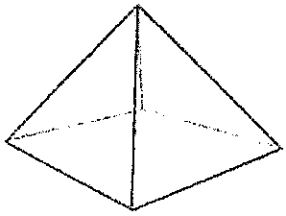
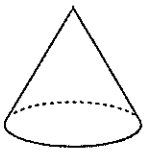
5. What is the volume of the following paper bag?



6. A cube has volume of 50 cubic centimeters. What is the length of an edge?

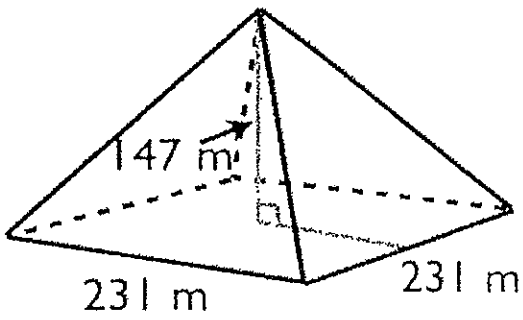
Lesson 10-7: Volume of Pyramids & Cones

Formulas

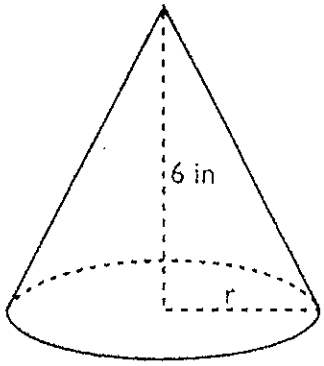
Type	Figure	Formula	Variable Meanings
Volume	Pyramid 		
	Cone 		

Practice

1. What is the volume of the Pyramid of Khufu with dimensions as shown?



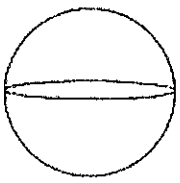
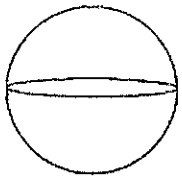
2. If a cone has a height of 6 inches and a volume of 40 cubic inches, what is the radius of the base?



3. If a square pyramid has a height of 12 and a total volume of 484, find the length of one side of the base.

Lesson 10-8 & 10-9: Volume & Surface Area of Spheres

Formulas

Type	Figure	Formula	Variable Meanings
Volume	Sphere 		
Surface Area	Sphere 		

Practice

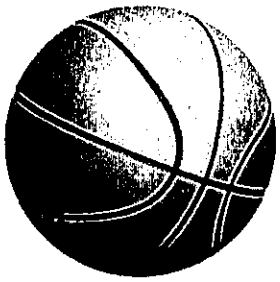
1. Find the volume and surface area of a sphere with radius 12 inches. Give an exact answer and a approximate answer for each. Round to the nearest hundredth.

2. A standard bowling ball cannot be more than 27 inches in circumference. What is the maximum volume and surface area of such a bowling ball?

3. How many times as great is the volume of a giant squid eyeball, as the volume of a human eyeball? Round your answer to the nearest hundredth.

Giant Squid Eyeball	Human Eyeball
radius = 12.5cm	radius = 1.25cm

4. How much material is needed to cover the basketball below with radius 20cm?



5. Find the surface area of a sphere with volume $144\pi \ in^3$.

6. Find the surface area of a sphere with a great circle that has an area of $4\pi \ in^2$.